NEWS

Climate talks snarled up

Two-pronged negotiations fail to bridge divide between nations.

International climate negotiators muddled through the latest round of global-warming talks in Bonn, Germany, last week, overshadowed by independent bilateral negotiations in Beijing between the United States and China.

Neither meeting produced any significant breakthroughs, and new disagreements seem to have outnumbered resolutions by a wide margin. At the United Nations climate talks that ended on 12 June in Bonn, delegates proposed so many new provisions and wording changes that the negotiation text ballooned fourfold to more than 200 pages — standard procedure for such negotiations, but one that flags up how much work remains to be done.

“We’re at the point where we desperately

need some higher-level leadership to get this process going,” says Keya Chatterjee, deputy director for climate change at the WWF environmental group in Washington DC.

Many observers placed their hopes instead on the talks in China, which played host during 7–10 June to a US delegation led by Todd Stern, the nation’s lead climate negotiator, and John Holdren, President Barack Obama’s chief science adviser.

The two countries together produce some 40% of global greenhouse-gas emissions, and there is little chance of achieving an international agreement in Copenhagen, where the UN talks are scheduled to conclude in December, unless the United States and China come to

an understanding. Nonetheless, expectations going into the Beijing meeting were low.

China released a position statement on 20 May calling on developed nations to reduce emissions to at least 40% below 1990 levels by 2020. The leading US climate legislation — a bill that could come up for a vote as early as this month in the House of Representatives — would establish an emissions-trading system to reduce US emissions to 1% below 1990 levels by 2020. Other provisions in the bill would go further,

Patchy pig monitoring may hide flu threat

Public-health experts are warning that a lack of surveillance may be allowing the 2009 pandemic H1N1 flu virus to go undetected in pigs. This raises the risk that the virus could circulate freely between humans and pigs, making it more likely to reassort into a deadlier strain, they say.

Pig surveillance is largely the remit of animal-health organizations, agriculture ministries and the farming industry. Their main concern tends to be that any reports of the pandemic virus in pigs might provoke overreactions such as the mass culling of pigs that took place in Egypt, or trade bans on pigs and pork. Within minutes of the World Health Organization (WHO) announcement on 11 June that swine flu had become a pandemic, Bernard Vallat, director-general of an intergovernmental trade body, the World Organisation for Animal Health (OIE), had reiterated that trade sanctions were unjustified. “So far the role of animals has not been demonstrated in the virus’s epidemiology or spread,” he asserted.

But some experts say that is an artefact of patchy to

Egypt has seen mass culling of pigs (above). WHO director-general Margaret Chan (right) last week declared that the new swine flu virus had reached pandemic status.

non-existent flu surveillance in pigs. In a paper published last week (G. J. D. Smith *et al.* *Nature* advance online publication doi: 10.1038/nature08182; 2009), Gavin Smith, a flu geneticist at the University of Hong Kong, and his colleagues concluded that “the lack of systematic swine surveillance allowed for the undetected persistence and evolution of this potentially pandemic strain for many years”. The virus originated from a mixture of swine flu strains, and pigs are an “obvious” part of the

epidemiology of the new virus, says Smith. Yet the number of swine-flu sequences in the international GenBank database is about a tenth of that for avian flu viruses. Circulation of the virus between pigs and humans is “definitely a possibility”, he adds.

The pandemic virus has so far been found in pigs from just one farm, in Alberta, Canada, where it spread throughout the herd. But no one has been able to pin down how the herd became infected. Scientists at the Veterinary

Laboratories Agency in Weybridge, UK, have shown that pigs can easily become infected with the virus, and readily transmit it between themselves and shed it into the environment. Past pandemic

viruses have also gone on to become endemic in pig populations.

“It’s absolutely surprising that a virus this contagious in both humans and swine, and which has been reported in humans in 76 countries, has only been reported in one swine farm in Canada,”

says Jimmy Smith, head of livestock affairs at the World Bank in Washington DC, and a member of the organization’s flu task force. “It is highly likely that more pigs are infected in more places.”

Absence of evidence of the pandemic virus in pig populations is not evidence of absence, concedes Steve Edwards, chairman of the OIE-FAO Network of Expertise on Animal Influenza (OFFLU), which coordinates work done by animal-flu surveillance labs worldwide, and former chief executive of the

N. NOUR/AP

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US climate envoy Todd Stern (left) in talks with China's vice-premier Li Keqiang.

but even the most optimistic assessment, by the World Resources Institute, pegs potential reductions at only 17–23% below 1990 levels.

"We certainly did not agree with each other on everything," said Stern after returning to Washington, "but I think that we each came away with a better and a clearer understanding of each other's views and perspectives."

Veterinary Laboratories Agency. "But we should not assume it is there until we have evidence to say so," he insists.

Whereas flu surveillance has improved over the past six years in poultry and wild birds, pigs have been below the radar, says Ilaria Capua, an animal-flu expert at the Experimental Animal Health Care Institute of Venice in Legnaro, Italy. The avian H5N1 flu virus leads to serious disease in poultry and causes huge economic losses, so the OIE requires its 174 member states to report any outbreaks. In pigs, flu viruses, although common, tend to cause only mild disease, so there is no obligation to report cases of swine flu, much less take samples for genetic and antigenic analysis. The OIE has, however, asked its member states to voluntarily report any occurrences of the 2009 pandemic virus in pigs.

"Surveillance for swine flu is not something that has been high on the agenda of government services," says Edwards. "It is seen as a farming-industry problem." Most flu surveillance in pigs is passive, relying on farmers or vets sending material to government labs. Active targeted surveillance with diagnostic tests is rarer, as it is more expensive.

OFFLU has called on labs

worldwide to share what information they have on swine flu, and to sequence any samples they have obtained recently. So far, however, the response has been "limited", says Edwards.

A meeting between experts from OFFLU and the WHO on 21 May — the conclusions of which were made public last week — recommended scaling up flu surveillance efforts in pigs, and OFFLU is now developing sampling and diagnostic protocols. Recommendations are all very well, but "somebody has to agree to fund all of this work", warns Edwards.

A pig of a job

Ironically, European Union funding for one of the world's largest pig surveillance networks expired in March. The European Surveillance Network for Influenza in Pigs, which was created in 2001, comprises

nine European labs and one in Hong Kong. Although the network has not yet detected the new virus in pigs, its coordinator Kristien Van Reeth, an animal virologist at Ghent University in Belgium, admits that participating labs have taken just a few hundred to a thousand samples each over the past year. Network members hope that with the pandemic highlighting the need for better pig surveillance, new funding will be forthcoming.

It is now clear that the animal- and public-health communities underestimated the potential for pigs to generate a pandemic virus. Although pigs can be infected with many subtypes of flu, the three most common endemic strains are H1N1, H1N2 and H3N2. Most expected that any new pandemic would involve the introduction of a viral subtype not previously seen in humans, such

emissions by about 8% below 1990 levels.

Such numbers would seem to indicate a substantial divide among industrialized countries, but the gap largely disappears if the commitments are measured against a 2005 baseline.

Using this baseline, Japan's proposal is a 15% reduction by 2020; Europe's, 9–13%; and the United States', up to 10%, according to an analysis by Nigel Purvis, a former US negotiator and current president of the Climate Advisers consultancy in Washington DC. If programmes to reduce emissions internationally are included, US emissions could decrease up to 28%, with Japan's also likely to drop further.

Next up are climate discussions at the G8 meeting in July in L'Aquila, Italy, to be accompanied by a leadership session of the US-sponsored Major Economies Forum.

Jeff Tollefson

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With just six months to go to Copenhagen and little convergence on any of the big issues, the question is whether countries are positioning themselves in expectation of striking a bargain there or merely digging trenches for a prolonged debate. Robert Stavins, an environmental economist at Harvard University, says he fears the latter might be true.

"The gulf between the countries of the industrialized world and what is usually referred to as the developing world," he says, "is, if anything, growing, or at least solidifying."

The largest pledged emissions cut on the table is of 30% from 1990 levels by 2020; that is what the European Union (EU) says it will do if others commit to similar cuts. If they don't, the EU offers only 20%. And things drop off quickly from there: Japan came under fire last week for proposing a plan to reduce domestic

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H1N1 update

As confirmed by the World Health Organization, as of 16 June:

Cases: 35,928, in 76 countries

Deaths: 163, in 8 countries

INDIA: The health ministry announces that it will install thermal scanners in Delhi's airport to test for travellers with fever.

For Nature's swine flu coverage, see www.nature.com/swineflu.

as the avian H5 subtype, explains Capua. "The consensus was that a pandemic could not be caused by H1, H2 or H3 because the current human population would have antibodies against them," she says.

The emergence of the reassorted H1N1 pandemic virus — which current research indicates no one has any immunity to, apart, perhaps, from some people older than 60 — has changed that thinking. Moreover, Nature has learned that the international community was warned of such a risk in a presentation at a closed meeting between the OIE, the WHO and the Food and Agriculture Organization of the United Nations in Paris in February. In the presentation, the results of which are in press at the journal *PLoS Pathogens*, Capua showed that serum samples from people vaccinated against seasonal flu strains showed little or no cross reactivity against H1, H2 and H3 bird viruses, meaning that they would have no immunity.

This shows that the world needs a comprehensive surveillance system of all influenza subtypes and their evolution across many animal species, says Capua: "We should be looking at the bigger picture."

Declan Butler

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